Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

REPORTS OF A CONFERENCE ON GEOGRAPHY.*

BY

ISRAEL C. RUSSELL.

A "Committee of Ten" was appointed by the National Educational Association in 1892, to consider the general subject of uniformity in school programmes and in requirements for admission to college. This committee, of which President Eliot of Harvard University was chairman, after preliminary discussion, decided to organize nine conferences consisting of ten representatives each, to be selected from instructors in schools and colleges. To each of the conferences a special branch of study, as for example, Latin, mathematics, natural history, geography, etc., was assigned. To each conference a list of eleven questions relating to school studies and to requirements for admittance to college was submitted, on which discussion and recommendation were invited. The report of the Committee of Ten was based on the reports of these several conferences.

The Conference of Geography held sessions in Chicago on December 28, 29 and 30, 1892, the following representatives being present:

T. C. Chamberlin, University of Chicago; George L. Collie, Beloit College; W. M. Davis, Harvard University; Delwyn A. Hamlin, Rice Training School, Boston; Mark B. Harrington, Weather Bureau, Washington; Edwin J. Houston, Philadelphia; Charles F. King, Dearborn School, Boston; Francis W. Parker, Cook County Normal School, Chicago; Israel C. Russell, University of Michigan.

Meetings were held at the Cook County Normal School and at the residence of Colonel Parker, the Principal of that well-known institution. I cannot let this opportunity pass without grateful acknowledgment of the generous hospitality extended to the members of the Conference by Colonel and Mrs. Parker.

---

* Report of the Committee on Secondary School Studies appointed at the meeting of the National Educational Association, July 9, 1892, with the reports of the Conferences arranged by this Committee, and held December 28–30, 1892 (published by the U. S. Bureau of Education, Washington, D. C., 1893), pp. 1–249.

Republished for the National Educational Association with the title "Report of the Committee of Ten on Secondary School Studies; with the reports of the Conferences arranged by the Committee," by the American Book Company, New York 1894, pp. I–VI, 1–249.

In the Conference a wide range of topics relating to the subject matter and methods of teaching geography were discussed, and the outline of a report to the Committee of Ten agreed on. A committee of two, of which Professor Chamberlin was chairman, was appointed to write a detailed report. This report, after being revised in accordance with suggestions from other members of the Conference, was duly submitted to the Committee of Ten.

The discussions of the Conference developed the fact that there was such a diversity of opinion among its members in respect to certain of the questions reviewed, that unanimous agreement could not be had. A Minority Report was subsequently sent to the Committee of Ten, by Mr. Houston, which, together with the Majority Report, has been printed in the volume described in an accompanying foot-note.

It is my desire to set forth the facts of greatest general interest embodied in these two reports, as fully as the space at command will permit. Although my name is appended to the Majority Report, my share in its production was trifling. I treat the report here as, what in fact it is, the work of others.

RELATIONS OF GEOGRAPHY.

At the very beginning, the Conference was confronted with the question "What is Geography?" It was found to be difficult to strictly define the scope of the science, because of its intimate relation and gradation into related sciences. It did not seem advisable to attempt to greatly modify the range of the subjects usually embraced under the term geography, but the following phases of the subject, in the order in which it was thought they should be studied, are emphasized in the Majority Report:

1. *Elementary Geography*, a broad treatment of the earth and its inhabitants and institutions, to be pursued in the primary, intermediate, and lower grammar grades.

2. *Physical Geography*, a more special but still broad treatment of the physical features of the earth, atmosphere and ocean, and of the forms of life and their physical relations, to be pursued in later grammar grades.

3. *Physiography*, a more advanced treatment of our physical environment in which the agencies and processes involved, the origin, development, and decadence of the forms presented, and the signifi-

cance of the features of the earth's face, are the leading themes, to be pursued in the later high-school or early college years.

4. *Meteorology*, a specialized study of atmospheric phenomena, to be offered by schools that are prepared to do so properly, as an elective in the later high-school years.

5. *Geology*, a study of the earth's structure and its past history, to be offered by schools prepared to do so properly, as an elective in the last year of the high-school course.

Each of these divisions of the subject is considered at length and many facts of general interest brought out. Let us glance at these discussions under their respective headings:

1. *Elementary Geography* should, in the opinion of the Conference, deal not only with the surface features of the earth, but embrace also elementary considerations of related sciences. This is recommended in order that scholars may obtain a wide general knowledge of nature, which will serve a useful purpose in case their studies end before the high school is reached; or serve as a foundation for more specialized study in case opportunities for advanced work can be embraced.

Applied geography, or geography in connection with commerce, history, botany, zoölogy, etc., it is urged, should be studied in connection with the subject to which they are secondary and give aid. It is recommended, for example, that political geography should be studied in connection with history, and that the distribution of plants and animals should form an important feature in the teaching of botany and zoölogy. This recommendation is based on the belief that in general all forms of applied geography are most advantageously studied in connection with their application, providing that a general knowledge of elementary geography has been previously given.

Physical Geography and Physiography. — In more advanced geographic studies, in the opinion of the majority of the Conference, the features of the earth's surface should receive special attention in connection with the agencies that produce and destroy them. The fact is emphasized that in this branch of the subject and in methods of treating it, there has been such a marked advance within recent years, largely, I may remark, through the studies of American geologists, that practically a new science has been developed for which a special name is desirable. *Physiography* is recommended for this purpose. To this decision the Minority Report takes decided exception, and gives preference to the retention of the term physical geography. This adverse opinion is based largely on the indefiniteness of the term suggested as now used by various authors. It may be said in this connection, however, that the objection cited applies equally well to many terms necessarily introduced in a growing science, and does not recognize the fact that the English language is itself developing and being modified in order to keep pace with intellectual progress.

The differences between the Majority and Minority reports are not radical, and are illustrated fairly well, I think, by the example cited. In the former, the recent advances and broader aspects of geographical science are recognized; in the latter, greater deference is paid to tradition.

The ground to be covered by physiography, or physical geography in its enlarged and modernized phase, embraces the study of the wasting of land surfaces, the transportation of the waste to the sea, and its deposition on the marginal sea bottoms; a brief account of the more common minerals and rocks in their relation to the changes of river action during the progress of land denudation; the relations of lakes, waterfalls, divides and their migration, flood-plains, deltas, etc., to the stage of river development in which they are observed; the development of shore lines and the variation of their features under the long-continued action of the shore waves; the interruptions of the normal progress of denudation and shore action by depression, elevation, or deformation; and by volcanic action or by climatic change, including briefly the effects of glacial action.

It is recommended that the various kinds of land forms, as plains, plateaus, mountains and volcanoes, should be considered in accordance with the constructional processes involved in their origin, and that their distribution over the earth should be briefly sketched.

A condensed account is also suggested of the results of recent deep-sea explorations so far as they relate to the forms of oceanic depressions and of the submerged continental borders, the condition of the ocean bottom, character and causes of currents and tides, etc. Should time permit, this phase of the study could be profitably extended so as to include the bearing of these conditions on the distribution of marine life.

The paths marked out for geographical study in the high schools necessitate an acquaintance on the part of the teacher with the latest advance in a rapidly-growing science. Many of the most instructive chapters on topographical development have not as yet found their way into text-books on geography. Properly speaking, there is no text-book available which adequately reflects the modernized phase of the subject. Hence, the hope that physiography will be widely introduced in high-school courses, cannot be realized until the few colleges adequately equipped for preparing teachers in this department have sent forth their students in considerable numbers.

Admirable courses in meteorology, suggested principally by Professor Davis, are outlined, both for grammar and high schools. These include laboratory work, the use of instruments, observations of the weather, preparation of careful records, the study of weather maps, etc. The plans proposed are so comprehensive that they might be advantageously adopted by many institutions of higher grade than the high schools.

The teaching of geology, although included among the subjects which the Conference was invited to discuss, is but meagrely treated. It is recommended, unless unusual facilities are available, that the study of the geography of the earth in past ages, as well as its life history, etc., be left to normal schools and colleges.

ORDER OF TREATMENT BASED ON MENTAL PROCESSES.

This broad subject is treated in the Majority report under four headings, viz.: (1) Observational geography; (2) Representative geography; (3) Descriptive geography; and (4) Rational geography. Of these four discussions the first is probably of greatest importance and contains the most ideas that stimulate thought.

In the judgment of the Conference, observation should go before all other forms of geographical study and prepare the way for them; its object being to develop the power and habit of geographic observation, to give the pupils true and vivid basal ideas, and to arouse a spirit of inquiry and a thirst for geographical knowledge. This work of observation should begin with those features that lie immediately about the pupils and so fall easily within the reach of their direct study and ready comprehension. In rural districts the natural features of the surface will obviously form a large part of the study, while in cities the artificial features must largely take the place of these. In the one instance, natural geography, as seen in the forms of the land, including hills, valleys, plains, meadows, divides, streams and lakes, will predominate; while in the other artificial or humanistic geography will receive leading attention, as streets, railways, wharves, harbors, parks, plots, wards, etc. But something of both these groups of subjects may be found and utilized in both localities. Neither should be neglected, for the pupils need not only to acquire clear ideas of the things by which they are chiefly surrounded, but type ideas of the things which characterize other localities, and of which they need to form correct ideas without being able to see them. Observation, however, should not be confined simply to the passive fixed features by which pupils are surrounded. They should observe the agencies that produce surface changes, such as winds, rains, floods, thawing, freezing, cultivation, etc. The temporary streams that follow heavy rains represent on a small scale many of the natural processes by which surface features are produced. From these immediate agencies the observations should extend to the phenomena of the weather and the climate, such as temperature, winds, clouds, seasons, etc.

An important supplement to one's ability to see the features that give expression to the face of nature, is facility in representing them in sketches, maps, models, etc. The study and practice of descriptive geography is thus only secondary in importance to the training of observation, and carries with it the ability to read maps, and obtain from them a realistic mental picture of the objects they portray.

In discussing rational geography, the fact that all the surface features of the earth are changing, that they have a past history and are on the road to future developments, is made prominent. It is by this branch of geographical study that the reasoning powers are most fully exercised. Each element in a landscape is due to antecedent causes, and preserves in its own form much of the history of its development. It is urged that the study of the reason of things should be assiduously cultivated, for it is the soul of the science.

GEOGRAPHY IN RELATION TO MENTAL DISCIPLINE.

The Majority report emphasizes the fact that clear and definite views of the culture purposes of geographical study cannot be too strongly urged upon the teacher. It is recommended that special attention be paid to the development of three separate classes of mental activities, viz., the power to observe, the power of scientific imagination, and the power of reasoning.

As resources for the training of the observational powers, attention is directed (1) to the study of surface forms, such as hills, valleys, plains, plateaus, streams, lakes, shores, and all similar phenomena within the pupils' horizon; (2) observations on the temperature and its relations to the direction of the sun's rays, the apparent motion of the heavenly bodies, as their circling round the poles, the rising and setting of some stars and not of others, the shifting north and south of the sun, moon, etc.; (3) movements of the atmosphere and their effects, rain and its effects, snow and its effects, fogs, clouds, etc.; (4) plant life and its dependence on heat, moisture, sunlight, etc.; the influence of soil, slope, etc.; (5) observations on animal life, of similar nature; (6) observations on man in the family, in educational, church, social, and business organizations, in city and town organizations, and so on up towards the larger human organizations and the forms of government.

Under work involving the culture of the imagination will fall the formation of concepts of all the larger features of geography and of all features beyond the range of observation, as (1) the river basins, the great relief systems, the continental divisions and subdivisions, the ocean bottoms, the distribution of land and water, and, in a less pronounced way, the picturing of all geographical features not actually observed; (2) modifications of apparent motions due to imagined changes of position of the observer on the earth's surface, such as the position at the pole, on the equator, on the different parallels, etc.; (3) distribution of the meteorological agencies over the globe, as moisture, winds, climate; the mental picturing of the great wind movements, the cyclonic circulation, the zones, etc.; (4) distribution of plant life developed in the form of a mental picture in its relations to the earth's surface, to land and water, to altitude and climatic conditions, as distinguished from a mere memorizing of the facts of distribution without any such pictorial conception; (5) distribution of animal life in like manner; (6) distribution of races of men, forms of government, national territory, etc.

The foregoing lists of topics furnish the ground-work for the culture of the reasoning powers if the question of causes and agencies is raised in connection with them. Why do the several features take the forms they do? By what agencies were they caused, and why did these agencies work in such ways? How did these forms originate? What are the causes of the winds, the clouds, the changes of temperature? Why are the animals and plants distributed as they are? Why were these cities located as they are? Why are these large and those small? Why do these railways take this course rather than another? And so on.

In discussing methods of presenting geographical information, stress is given to the equipment of geographical laboratories. In reading these recommendations, one is saddened by the thought that with few exceptions, and at present I have but two in mind, the colleges and universities of America lack the equipment that is thought requisite for public schools. It may be said, perhaps, that the requirements of schools and colleges differ, but all, I think, will admit that geography in some of its phases is as well suited to be taught in the colleges as in the schools.

It is recommended that schools be supplied (1) with large-scale maps of their own district and their own State; (2) with the best obtainable series of general maps, prepared as far as possible on uniform scales; the style of projection and the scale being indicated on each map; (3) with a sufficient number of small globes to enable every scholar sufficiently advanced to study the globe individually; (4) with illustrations of various kinds as liberally as possible, including photographs, lantern slides and means of projection; (5) if possible, with a few models (whose scale should not be unreasonably exaggerated) representing the home district, if these can be obtained, or, if not, at least with typical models of some interesting regions of our own country; (6) with books of reference on history, travels, natural history, etc.; involving geographical elements and suitable for the use of both scholars and teachers, and in increasing numbers year by year; and (7) with a selected series of topographical maps.*

One of the questions submitted to the Conference for discussion and recommendation relates to the time at which the study of geography should be begun. In reply, it is stated that while the simple facts of a geographical nature cannot be introduced too early in a child's education, it is not recommended that the formal study of geography as a separate subject, however elementary, be undertaken in the lowest grades. But the habit of observation should be stimulated as soon as the child enters the school and its development constantly encouraged.

---

* The importance of placing good topographical maps in the hands of students, led to the appointing by the Conference of a committee consisting of Messrs. Davis, King and Collie, to consider in what way the maps issued by various Government and State surveys might be made available for school use. A valuable report by this committee entitled, "The Use of Government Maps in Schools," has been published by Henry Holt & Co., New York. Price 34 cents. In it are instructive descriptions of over fifty phases of relief that are well illustrated by maps which can be had by teachers either free of charge or for a nominal sum to cover press-work and paper. This report of 65 pages contains a brief account of the maps issued by the U. S. Geological Survey; U. S. Coast and Geodetic Survey; Mississippi River Commission; Missouri River Commission; U. S. Lake Survey; State topographic surveys, including those of Massachusetts, Rhode Island, Connecticut and New Jersey; U. S. Weather Bureau, and U. S. Hydrographic Office.

Outlines of methods of instruction in various grades are suggested, but it is in connection with high-school work that the broadest treatment of the subject is presented. These recommendations are filled with the spirit of modern science and pregnant with ideas that are of interest not only to teachers, but to all who are inclined to either fireside-travel or active exploration.

In illustration of the scope of physiography, the development of land forms is presented as an indication of the nature of the paths to be followed. It is stated that the general conception of the wasting of a land area and the ultimate production of a lowland of denudation from whatever form the area had in its earlier stages, deserves early and deliberate illustration. Around this fundamental conception, the teacher may group a variety of facts, both local and general, concerning the rocks and their structural relations in the earth's crust, on the one hand, and the weather and its expression in climate on the other hand. However hard its rocks, however dry the climate, a lowland of faint relief is the ultimate form of every land area under the slow wasting of its surface; and during all the progress of this wasting, a systematic sequence of forms is exhibited. The essential elements in the study are thus introduced early and in their simplest form; the slow but continuous variation of land forms under these processes; the long duration of time that must be considered, even if not conceived. Every part of the land surface represents some stage in the course of its progress from its beginning in constructional uplifting or accumulation, towards its end as a completed lowland of denudation.

The particular consideration of rivers, under whose guidance the waste of the land is carried to the sea, may be advisably introduced as the next general heading; because, from whatever constructional processes of accumulation or uplift a region has its beginning, there are certain general features of river-life common to all regions, and these may be conveniently presented before the different structional kinds of land forms are taken up. This serves not only to impress upon the scholars the systematic sequence of form-changes during the progress of general denudation, but also to emphasize the many features of the land that are associated with the development of its drainage. Throughout this division of the subject, particular care should be taken to bring the class into sympathy with the subject, by forgetting for the moment human measures of time and looking at rivers in the way rivers would look at themselves. Thus are examined the conditions that determine the original drainage area of a river, the location of its enclosing divides, and the arrangement of tributary branches; then the quick deepening of its valleys and the drainage of any lakes in which its waters may be at first detained, and, at the same time, the development of additional young side-streams, the accompanying subdivision of the drainage area, and, occasionally, the rearrangement of discharge by the shifting of divides under the action of active competing streams; with the rapid deepening of the valleys comes at first the development and later the extinction of the water falls; with the widening of the valleys comes the slow spreading out of land-waste in flood plains where the mature streams meander and in deltas, where the streams branch out in "distributaries." Late in river-life, when the inter-stream hills are wasted away, the old streams wander sluggishly almost at will along ill-defined courses, slowly doing the little that remains for the completion of their life-work. During the advance of this consideration, specific examples may be given of rivers in one or another stage of development from various parts of the world.

After gaining an understanding of changes in the life of an undisturbed river, the effects of elevation, depression, or deformation of the land, or of climatic changes may be introduced. With their introduction, an important step is taken toward the more complicated conditions of nature; at the same time, the subject becomes somewhat more difficult from the necessity of maintaining a greater number of factors in mind while interpreting the relations of rivers having more or less disturbed development.

The consideration of regions of different structure, and hence of different surface expression, advisably follows the preceding account of river development.

In illustration of what is here intended, reference is made to the group of plains and plateaus, characterized by possessing a horizontally stratified structure. These may be first considered according to the condition of their accumulation; as marine plains, lacustrine plains, fluviatile plains, lava plains, snow plains and dust plains. Second, according to the manner in which those formed under water have become exposed as dry land; as by upheaval from beneath the sea, by down-cutting of lake outlets, by evaporation of lake waters in arid climates, by melting away of the ice barriers of glacial lakes. Third, according to the expression of surface form as dependent on complication of structure, altitude above sea-level, stage of development, condition of climate. Fourth, according to the distribution of plains and plateaus of different kinds; thus we find a young marine plain in Florida, an old marine plain, much dissected, in West Virginia; a young lacustrine plain in Minnesota and Dakota, an older lacustrine plain in the Green River Basin of Wyoming; a young lava plain in the Snake River Basin of Idaho, an older lava plain in West Scotland, and so on. Mountains should receive similar treatment. Features of glacial origin deserve especial attention in the Northern States.

Experience shows that when the subdivisions of the land are thus rationally explained, their peculiarities are much more easily remembered, and their relations to habitation and productions are much more fully appreciated. By comparing this outline with the table of contents in the classic works on Geography by Ritter, Humboldt and Guyot, it will be seen that a new element has been introduced into the science by the modern school. Rational geography has supplanted mere description. The fact that rivers and lakes, mountains and plains, have life histories, and have resulted from far-reaching causes, and are still undergoing change, places geography on a higher plane as a disciplinary study than has generally been recognized.

GEOGRAPHY IN EXAMINATION FOR ADMISSION TO COLLEGE.

One of the most important questions referred to the Conference, relates to the weight to be given to geography in examination for admission to college. In this connection the Conference recommended that colleges should accept as preparatory work in such due measure as a fair estimate of their value shall admit, all studies which the high schools are compelled by their conditions to teach, and that physiography, geology and meteorology should be given values equal to the full extent of the work expended in their pursuit.

To the last recommendation the Minority report takes exception on the ground that the subjects mentioned are too nearly allied.

At a joint session of the Conference on Geography and the Conference on Natural History, held at the University of Chicago, the terms for admission to college were discussed at length, and the following resolution unanimously adopted:

> " Resolved, that it is the sense of the Joint Conference that at least one-fourth of the time of the High School course be devoted to nature studies, and that this amount of preparation be required for entrance to college."

This recommendation does not appear in connection with the published report of the Committee of Ten.

The conclusion in reference to requirements for admission to college, embodied in the above, has important bearings on questions now being discussed in educational societies and college faculties. The conflict between classical and modernized scientific courses is still being carried on, although the end seems near. On one side are arranged those who believe that a liberal education, culture and refinement can only be had by pursuing the traditional routine in which the study of ancient languages occupies a major part; in opposition, are teachers who see in the modern science many branches of study fitted to develop individuality and intellectual independence, as well as to promote culture and refinement.

Those who have taken an active part in modernizing and vivifying geographical science, are of the opinion that in the educational revolution now in progress, it should be placed in the first rank in all grades of study from the primary to the post-graduate. Its claim for such a conspicuous place is, as expressed in the report before us, because it *develops the powers of observation, the powers of scientific imagination and the powers of reasoning.*